

**REMARKS*****Summary of the Response***

By the present response, claims 84, 127, 130 and 132 have been amended. Applicant submits that no new matter is added by the present amendment. More specifically, Applicant has amended claim 84 to more clearly define features of the present invention, and claims 127, 130 and 132 have been amended into independent form with the features of previously presented independent claim 84 and any intervening claims. Support for the amendment may be found, for example, at least in previously presented claims 119 and 127. Accordingly, upon entry of the amendment, claims 84 – 143 will be pending. Reconsideration of the rejected claims in view of the above amendment and following remarks is respectfully requested.

***Summary of the Office Action***

In the instant Office Action, the Examiner has rejected claims 84 - 126 and 135 - 143 over the art of record, and has objected to claims 127 - 134. By the present amendment and remarks, Applicant submits that the rejections have been overcome, and respectfully requests reconsideration of the outstanding Office Action and allowance of the present application.

***Amendment Proper for Entry***

Applicant submits that the entry of the above amendment is proper. Applicant submits that the entry of the amendment is proper, since such amendment places the application in condition for allowance or, alternatively, places the application in better form for appeal.

*Allowable Subject Matter*

Applicant appreciates the Examiner's indication that claims 127 – 134 contain allowable subject matter and would be allowable if rewritten in independent form. By the present amendment, Applicant has amended claims 127, 130 and 132 into independent form. Additionally, Applicant respectfully submits that all of the pending claims are allowable for the reasons set forth below.

*Traversal of Rejections Under 35 U.S.C. § 103(a)*

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. See MPEP §2142. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.<sup>1</sup> Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

---

<sup>1</sup> While the *KSR* court rejected a rigid application of the teaching, suggestion, or motivation ("TSM") test in an obviousness inquiry, the [Supreme] Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" in an obviousness determination. *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356-1357 (Fed. Cir. 2007) (quoting *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1731 (2007)).

1. Over KOGA in view of SAKAKIBARA

Applicant traverses the rejection of claims 84, 85, 88, 89, 94 - 97, 101 - 111, 118 - 126 and 139 - 143 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,268,710 to Koga [hereinafter "KOGA"] in view of U.S. Patent No. 6,433,517 to Sakakibara [hereinafter SAKAKIBARA]. The rejection is respectfully traversed.

*Independent Claim 84*

The present invention relates to a portable electric tool set. Independent claim 84 recites, in pertinent part:

. . . wherein the battery comprises one of a rechargeable electrochemical lithium-ion or rechargeable electrochemical lithium polymer battery,

wherein at least one of the at least one electric or electronic module and the cutoff device are operable to prevent overcharging of the battery during a charging phase,

wherein the at least one of the at least one electric or electronic module and the cutoff device are operable to prevent over-discharging of the battery during operation of the tool,

wherein the at least one of the at least one electric or electronic module and the cutoff device are operable to protect the battery against excess current during a discharging phase, and

wherein the at least one of the at least one electric or electronic module and the cutoff device are operable to interrupt the discharging phase to turn off the tool, when at least one cell of the battery reaches a threshold minimum voltage recommended by a manufacturer of the battery.

In addressing previously presented claim 84, the Examiner asserts KOGA in view of SAKAKIBARA teaches or suggests each of the features of previously presented claim 84. While Applicant does not agree with the Examiner that the applied art under 35 U.S.C. §103(a) renders unpatentable the embodiments of the invention recited in at least previously presented claim 84, in an effort to advance prosecution, claim 84 has been amended to even more clearly

define the features of the present invention. Further, Applicant expressly reserves the right to refile the subject of independent claim 84 as presented prior to this amendment in one or more continuing applications.

Applicant respectfully submits that KOGA in view of SAKAKIBARA does not teach or suggest each of the features of currently amended claim 84. For example, Applicant submits KOGA in view of SAKAKIBARA at least does not teach or suggest at least one of the at least one electric or electronic module and the cutoff device are operable to protect the battery against excess current during a discharging phase.

KOGA teaches a battery monitoring apparatus for monitoring the *voltage* of each cell, detecting current, and controlling the charge and/or discharge of each cell. Applicant submits, however, KOGA does not teach or suggest protecting the battery against excess current during a discharging phase. That is, while Applicant acknowledges KOGA may teach or suggest interrupting a discharge when a low voltage threshold is reached, Applicant submits KOGA fails to provide any guidance as to what one ordinarily skilled in the art would consider an excess current during a discharge phase, and therefore, is silent with respect to protecting the battery from excess current during a discharge phase.

Additionally, Applicant notes SAKAKIBARA does not cure the above-noted deficiencies of KOGA. SAKAKIBARA is directed to a battery charger and charging method for a nickel metal hydride battery. (See, SAKAKIBARA, e.g., column 1, lines 28 – 39.) Moreover, as SAKAKIBARA is directed to a battery charger and charging method, this document does not discuss controlling the current during a *discharging phase* (e.g., operation of a tool). As such, Applicant submits SAKAKIBARA provides no arguable teaching of what one skilled in the art would consider an excess current during a discharge phase or even remotely suggest monitoring

for excess current during a discharging. Thus, SAKAKIBARA would not be subject to the controlling and managing as provided by the presently claimed invention (e.g., protecting against excess during discharging). Furthermore, Applicant submits SAKAKIBARA appears to be completely silent with regard to over-discharging.

As such, Applicant submits SAKAKIBARA does not cure the deficiencies of KOGA, and KOGA in view of SAKAKIBARA does not teach or suggest each of the features of the presently claimed invention.

Accordingly, Applicant respectfully requests the Examiner withdraw the rejection of claim 84 and indicate that claim 84 is allowable over KOGA in view of SAKAKIBARA.

*Dependent Claims 85, 88, 89, 94 - 94, 101 - 111, 118 - 126 and 139 - 143*

Applicant respectfully submits that claims 85, 88, 89, 94 - 94, 101 - 111, 118 - 126 and 139 - 143 depend from allowable independent claim 84, and are allowable based upon the allowability of independent claim 84, and because these claims recite additional subject matter to further define the instant invention.

*Dependent Claim 97*

Applicant submits the Examiner did not properly address the features of claim 97, in that the Examiner failed to address each of the features of claim 97. That is, while claim 97 recites, *inter alia*, “. . .when a discharging current for the battery has reached a minimum low level . . .,” in addressing claim 97, the Examiner failed to address the recited “discharging current.” Instead, the Examiner refers to “voltage.”

The Examiner is respectfully reminded of the guidance provided by MPEP § 707.07(f), which states:

In order to provide a complete application file history and to enhance the clarity of the prosecution history record, an examiner must provide clear explanations of all actions taken by the examiner during prosecution of an application.

Additionally, the Examiner is respectfully reminded of the guidance provided by MPEP § 2143.03, which states:

All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Applicant respectfully submits the rejection of claim 97 is *per se* improper and the Examiner has failed to provide a complete action and a clear record, as discussed further below.

#### Claims 122 - 124 and 142

In addressing claims 122 - 124 and 142, the Examiner asserts the features recited in these claims would have been obvious under a rationale of optimization through routine experimentation. Applicant submits, however, that the Examiner has failed to establish that the prior art recognizes such features as results effective variables.

MPEP §2144.05 states that, in regard to routine experimentation, only prior art recognized result-effective variables can be optimized for purposes of formulating an obviousness rejection. More specifically:

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had

a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result- effective variable.). See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

(MPEP §2144.05) [emphasis added]

Applicant respectfully submits, however, that the Examiner has failed to establish that the prior art recognizes the features recited in claims 122 - 124 and 142 are result-effective variables. As such, Applicant submits the rejections of claims 122 - 124 and 142 are *per se* improper.

Accordingly, for at least these reasons, Applicant respectfully requests the Examiner withdraw the rejection of claims 84, 85, 88, 89, 94 - 94, 101 - 111, 118 - 126, and indicate claims 84, 85, 88, 89, 94 - 94, 101 - 111, 118 - 126 are allowable.

## 2. Over KOGA in view of SAKAKIBARA and PFEIFER

Applicant traverses the rejection of claims 86, 87 and 91 - 93 under 35 U.S.C. § 103(a) as being unpatentable over KOGA in view of SAKAKIBARA, and further in view of U.S. Patent No. 6,087,815 to Pfeifer et al. [hereinafter “PFEIFER”]. The rejection is respectfully traversed.

Applicant respectfully submits that claims 86, 87 and 91 - 93 depend from allowable independent claim 84, and are allowable based upon the allowability of independent claim 84, and because these claims recite additional subject matter to further define the instant invention.

Applicant notes that PFEIFER has not been alleged to cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84; rather, this document has been cited to address features presented in dependent claims. Moreover, Applicant submits that PFEIFER does not cure the deficiencies of KOGA in view of SAKAKIBARA in reference to

currently presented claim 84. For example, PFEIFER does not teach or suggest protecting the battery against excess current during a discharging phase. Instead, PFEIFER discusses protection against voltage fluctuations and preventing an overheating condition. While acknowledging that PFEIFER monitors current to determine an overheating condition, Applicants submit PFEIFER does not teach or suggest protecting the battery against excess current during a discharging phase. As such, Applicant submits that no proper combination of KOGA, SAKAKIBARA and PFEIFER teach or suggest each of the features of the present invention, and that KOGA in view of SAKAKIBARA and PFEIFER does not render the present invention unpatentable.

Accordingly, for at least these reasons, Applicant respectfully requests the Examiner withdraw the rejection of claims 86, 87 and 91 – 93, and indicate claims 86, 87 and 91 – 93 are allowable.

### 3. Over KOGA in view of SAKAKIBARA and TAKANO

Applicant traverses the rejection of claim 90 under 35 U.S.C. § 103(a) as being unpatentable over KOGA in view of SAKAKIBARA, and further in view of U.S. Patent Publication No. 2003/0096158 to Takano et al. [hereinafter TAKANO]. The rejection is respectfully traversed.

Applicant respectfully submits that claim 90 depends from allowable independent claim 84, and is allowable based upon the allowability of independent claim 84, and because this claim recites additional subject matter to further define the instant invention.

Applicant notes that TAKANO has not been alleged to cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84; rather, this document has been cited to address features presented in a dependent claim. Moreover, Applicant submits that

TAKANO does not cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84. TAKANO is directed to a battery pack and cordless power tool. Applicant submits, however, that TAKANO does not teach or suggest protecting the battery against excess current during a discharging phase. Instead, TAKANO teaches an alerting means for indicating to a user that the battery is in a charge-need condition. The alerting means includes a switching unit, which is operable to reduce current to produce an observable condition (e.g., a slowed rotation of the power tool). As such, Applicant submits that TAKANO does not teach that the reduced current during the "alert" is for providing protection against excess current, but instead, to affect the operation of the power tool to provide an observable signal. As such, Applicant submits that no proper combination of KOGA, SAKAKIBARA and TAKANO teach or suggest each of the features of the present invention, and that KOGA in view of SAKAKIBARA and TAKANO does not render the present invention unpatentable.

Accordingly, for at least these reasons, Applicant respectfully requests the Examiner withdraw the rejection of claim 90, and indicate claim 90 is allowable.

#### 4. Over KOGA in view of SAKAKIBARA and KOPERA

Applicant traverses the rejection of claims 112 - 117 under 35 U.S.C. § 103(a) as being unpatentable over KOGA in view of SAKAKIBARA, and further in view of U.S. Patent No. 5,808,469 to Kopera<sup>2</sup> [hereinafter "KOPERA"]. The rejection is respectfully traversed.

---

<sup>2</sup> Applicant notes that the Office Action indicates that claims 112 - 117 were rejected over KOGA in view of SAKAKIBARA, and further in view of U.S. Patent No. 5,808,469 to Rouillard et al. Applicant again notes, however, that U.S. Patent No. 5,808,469, which is the document listed in the Form-892, is to Kopera and not to Rouillard et al. As such, Applicant assumes the Examiner intended to apply Kopera (i.e., U.S. Patent No. 5,808,469) and not Rouillard et al., and have addressed the Office Action accordingly.  
(P29780 01015485.DOC)

Applicant respectfully submits that claims 112 - 117 depend from allowable independent claim 84, and are allowable based upon the allowability of independent claim 84, and because these claims recite additional subject matter to further define the instant invention.

Applicant notes that KOPERA has not been alleged to cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84; rather, this document has been cited to address features presented in dependent claims. Moreover, Applicant submits that KOPERA does not cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84. KOPERA is directed to a battery monitor for monitoring the voltage and temperature of batteries of an electric vehicle. However, Applicant submits that KOPERA provides no arguable teaching of what one ordinarily skilled in the art would consider an excess current during a discharge or even remotely suggest monitoring for excessive current during a discharge. Thus, KOPERA does not teach or suggest protecting the battery against excess current during a discharging phase, as recited in claim 84.

As such, Applicant submits that no proper combination of KOGA, SAKAKIBARA and KOPERA teach or suggest each of the features of the present invention, and that KOGA in view of SAKAKIBARA and KOPERA does not render the present invention unpatentable.

#### Claims 113 - 115

In addressing claims 113 - 115, the Examiner asserts the features recited in these claims would have been obvious under a rationale of optimization through routine experimentation. Applicant submits, however, that the Examiner has failed to establish that the prior art recognizes such features as results effective variables.

As noted above, MPEP §2144.05 states that, in regard to routine experimentation, only prior art recognized result-effective variables can be optimized for purposes of formulating an obviousness rejection. Applicant respectfully submits, however, that the Examiner has failed to establish that the prior art recognizes the features recited in claims 113 - 115 are result-effective variables. As such, Applicant submits the rejection of claims 113 - 115 is *per se* improper.

Accordingly, for at least these reasons, Applicant respectfully requests the Examiner withdraw the rejection of claims 112 - 117, and indicate claims 112 - 117 are allowable.

##### 5. Over KOGA in view of SAKAKIBARA and CHAMBERLAIN

Applicant traverses the rejection of claims 98 - 100 under 35 U.S.C. § 103(a) as being unpatentable over KOGA in view of SAKAKIBARA, and further in view of U.S. Patent No. 5,466,545 to Chamberlain et al. [hereinafter “CHAMBERLAIN”]. The rejection is respectfully traversed.

Applicant respectfully submits that claims 98 - 100 depend from allowable independent claim 84, and are allowable based upon the allowability of independent claim 84, and because these claims recite additional subject matter to further define the instant invention.

Applicant notes that CHAMBERLAIN has not been alleged to cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84; rather, this document has been cited to address features presented in dependent claims. Moreover, Applicant submits that CHAMBERLAIN does not cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84. For example, Applicant submits that CHAMBERLAIN does not teach or suggest protecting the battery against excess current during a discharging phase, as recited in claim 84. CHAMBERLAIN is directed to a shock-

resistant battery pack, and is completely silent with regard to “discharge” and “discharging.” CHAMBERLAIN provides no arguable teaching of what one ordinarily skilled in the art would consider an excess current during a discharge or even remotely suggest monitoring for excessive current during a discharge. Thus, Applicant submits that no proper combination of KOGA, SAKAKIBARA and CHAMBERLAIN teach or suggest each of the features of the present invention, and that KOGA in view of SAKAKIBARA and CHAMBERLAIN does not render the present invention unpatentable.

Accordingly, for at least these reasons, Applicant respectfully requests the Examiner withdraw the rejection of claims 98 - 100, and indicate claims 98 - 100 are allowable.

#### 6. Over KOGA in view of SAKAKIBARA and BROTTO

Applicant traverses the rejection of claims 135 - 137 under 35 U.S.C. § 103(a) as being unpatentable over KOGA in view of SAKAKIBARA, and further in view of U.S. Patent No. 6,218,806 to Brotto et al.<sup>3</sup> [hereinafter “BROTTO”]. The rejection is respectfully traversed.

Applicant respectfully submits that claims 135 - 137 depend from allowable independent claim 84, and are allowable based upon the allowability of independent claim 84, and because these claims recite additional subject matter to further define the instant invention.

Applicant notes that BROTTO has not been alleged to cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84; rather, this document has been cited to address features presented in dependent claims. Moreover, Applicant submits that BROTTO does not cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84. For example, Applicant submits that BROTTO does not teach or

---

<sup>3</sup> Applicant notes the Examiner identified this document as “Smith et al.”  
(P29780 01015485.DOC)

suggest protecting the battery against excess current during a discharging phase, as recited in claim 84. Applicant notes BROTTO is completely silent with regard to “protect,” “protection,” “protecting,” “discharge” and “discharging.” BROTTO provides no arguable teaching of what one ordinarily skilled in the art would consider an excess current during a discharge or even remotely suggest monitoring for excessive current during a discharge. As such, Applicant submits that no proper combination of KOGA, SAKAKIBARA and BROTTO teach or suggest each of the features of the present invention, and that KOGA in view of SAKAKIBARA and BROTTO does not render the present invention unpatentable.

Accordingly, for at least these reasons, Applicant respectfully requests the Examiner withdraw the rejection of claims 135 - 137, and indicate claims 135 - 137 are allowable.

#### 7. Over KOGA in view of SAKAKIBARA, BROTTO and SANDERS

Applicant traverses the rejection of claim 138 under 35 U.S.C. § 103(a) as being unpatentable over KOGA in view of SAKAKIBARA and BROTTO, and further in view of U.S. Patent Publication No. 2004/0027094 to Sanders et al.<sup>4</sup> [hereinafter “SANDERS”]. The rejection is respectfully traversed.

Applicant respectfully submits that claim 138 depends from allowable independent claim 84, and is allowable based upon the allowability of independent claim 84, and because this claim recites additional subject matter to further define the instant invention.

Applicant notes that SANDERS has not been alleged to cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84; rather, this document has been cited to address features presented in dependent claims. Moreover, Applicant submits that

---

<sup>4</sup> Applicant respectfully notes the Examiner misidentified this document as “Smith et al.”  
(P29780 01015485.DOC)

SANDERS does not cure the deficiencies of KOGA in view of SAKAKIBARA in reference to currently presented claim 84. For example, Applicant submits that SANDERS does not teach or suggest protecting the battery against excess current during a discharging phase, as recited in claim 84. Applicant notes SANDERS is directed to a battery monitoring network, which can be implemented on existing standard open network protocols, and is completely silent with regard to “protect,” protection,” “protecting,” “excess current,” “extra current” and “high current.” SANDERS provides no arguable teaching of what one ordinarily skilled in the art would consider an excess current during a discharge or even remotely suggest monitoring for excessive current during a discharge. As such, Applicant submits that no proper combination of KOGA, SAKAKIBARA, BROTTO and SANDERS teach or suggest each of the features of the present invention, and that KOGA in view of SAKAKIBARA, BROTTO and SANDERS does not render the present invention unpatentable.

Accordingly, for at least these reasons, Applicant respectfully requests the Examiner withdraw the rejection of claim 138, and indicate claim 138 is allowable.

*Complete Action Not Provided*

Applicant respectfully submits that the Examiner did not address each of the features of claim 97. Additionally, Applicant submits the Examiner did not properly address the features of claims 113 - 115, 122 - 124 and 142, as noted above, as the Examiner failed to establish that the prior art recognizes the features of claims 113 - 115, 122 - 124 and 142 as result-effect variables. Thus, Applicant respectfully submits that the Examiner has not set forth a complete action or a clear record.

For at least these reasons, Applicant submits that a clear issue was not developed between the Examiner and Applicant. More specifically, MPEP §706 states:

Before final rejection is in order a clear issue should be developed between the examiner and applicant. To bring the prosecution to as speedy conclusion as possible and at the same time to deal justly by both the applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and the references fully applied; and in reply to this action the applicant should amend with a view to avoiding all the grounds of rejection and objection.

Additionally, MPEP 706.07(a) notes:

Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p). ...

Furthermore, a second or any subsequent action on the merits in any application ... will not be made final if it includes a rejection, on newly cited art, other than information submitted in an information disclosure statement filed under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17 (p), of any claim not amended by applicant or patent owner in spite of the fact that other claims may have been amended to require newly cited art.

Accordingly, Applicant respectfully requests that the Examiner properly address the untreated features of the claimed invention and Applicant's arguments, such that a clear issue is developed between the Examiner and Applicant. Moreover, Applicant submits that the finality of the instant action should be withdrawn, and the next action, which should clarify the record, should not be a final action.

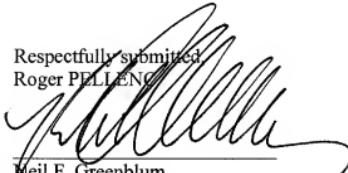
**CONCLUSION**

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicant's invention, as recited in claims 84 – 143. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate.

Should there be any questions or comments, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
Roger PELLENC



Neil F. Greenblum  
Reg. No. 28,394

Robert W. Mueller  
Reg. No. 35,043

GREENBLUM & BERNSTEIN, P.L.C.  
1950 Roland Clarke Place  
Reston, VA 20191  
(703) 716-1191